

# RIVER MURRAY FLOW REPORT and WATER RESOURCES UPDATE

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Report #11/2017

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**This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 10 March 2017. The next report will be provided on Friday 24 March 2017.**

In this report, for ease of representation, large volumes of water are expressed in gigalitres (GL), while smaller volumes are expressed in megalitres (ML). One GL is equal to 1 000 ML.

## 2017-18 WATER ALLOCATIONS AND CARRYOVER

South Australian River Murray water access entitlement holders (Class 3a, 3b, 4, 7 and 8) will receive 100% water allocation in 2017-18. Private carryover will not be made available in 2017-18 due to the positive water resource availability outlook and the risk of spill from the Murray-Darling Basin controlled storages.

## WATER TRADE

Water New South Wales has advised that interstate trade between New South Wales and South Australia for the 2016-17 season will close on 30 April 2017. The closing date also applies to trades between New South Wales and Victoria.

The final date for South Australian River Murray water access entitlement holders to receive guaranteed processing and determining of River Murray water allocation trade applications for the 2016-17 water year is Friday, 16 June 2017. The final date is always the third Friday in June.

## MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

The Murray-Darling Basin Authority confirmed that on 1 March 2017 South Australia had 189.8 GL of deferred water held in storage. The table below identifies the storage in which it is held and the purpose.

At 1 March 2017				
Purpose	Lake Victoria (GL)	Hume (GL)	Dartmouth (GL)	Total (GL)
*CHWN	22.1	0.0	81.8	103.9
Private Carryover	26.4	0.0	59.5	85.9
<b>Total</b>	48.5	0.0	141.3	189.8

\*Critical Human Water Needs (CHWN)

Volumes stored are adjusted for net evaporation losses and spills until delivered to South Australia.

South Australia is seeking opportunities to defer and store water during the remainder of 2016-17.

## WATER RESOURCES UPDATE

During February 2017 the total River Murray System inflow was approximately 120 GL, which is below the February long-term average of 190 GL. Inflow to Menindee Lakes (from the Darling System) during February 2017 was approximately 0 GL, which is below the February long-term average of 125 GL.

The flow to South Australia during February 2017 was approximately 258 GL which is just below the February long-term average of approximately 291 GL. The flow comprised:

- 171.6 GL of Entitlement Flow (194 GL less deferred water of 22.4 GL) this includes environmental water on SA licence
- 3 GL of additional dilution flow
- 75 GL of environmental water, and
- 8 GL of trade into South Australia.



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## STORAGE VOLUMES

### Murray-Darling Basin Storage Volumes

Storage	Full Supply Volume (GL)	15/3/2017 (GL)	15/3/2016 (GL)	Long-term average (end of March) (GL)
Dartmouth	3 856	2 993 (78%)	1 701 (44%)	
Hume	3 003	2 128 (71%)	877 (29%)	
Lake Victoria	677	417 (62%)	306 (45%)	
Menindee Lakes	*1 731	992 (57%)	51 (3%)	
<b>TOTAL</b>	<b>9 267</b>	<b>6 530 (70%)</b>	<b>2 935 (32%)</b>	<b>5 504 (59%)</b>

\*Menindee Lakes can be surcharged to 2 015 GL

## RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for March to May 2017 indicates drier than average rainfall with warmer than average temperatures across the Murray-Darling Basin. The outlook is influenced by a neutral El Niño-Southern Oscillation.

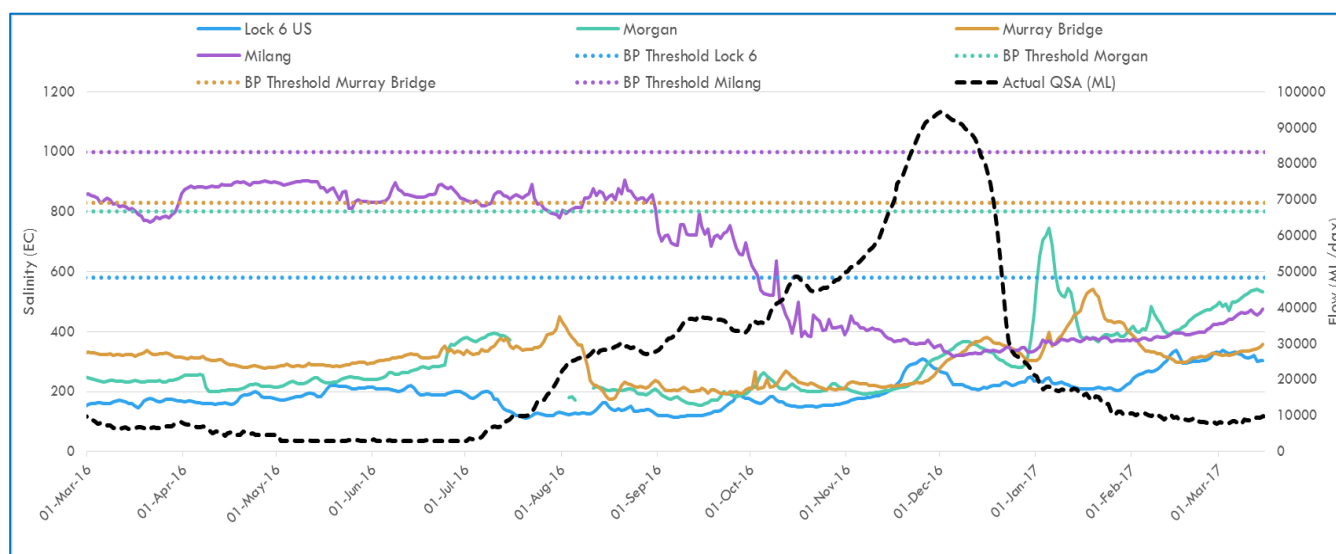
## WATER QUALITY - Salinity

A number of targets are identified under the Basin Plan, which all Basin States must have regard to in managing River Murray flows. The targets for real-time salinity are identified below. Salinity must not exceed these values for 95 per cent of the time:

- 580 EC at Lock 6
- 800 EC at Morgan
- 830 EC at Murray Bridge
- 1 000 EC at Milang

The following graph shows the salinity at these locations and the flow to South Australia (QSA) from March 2016 to March 2017. The dashed-lines identify the Basin Plan (BP) thresholds for the corresponding colour coded location.

SA River Murray Daily Average Salinity



Note: Missing Morgan salinity readings from 16-11 August 2016 are due to a faulty EC sensor

## FLOW OUTLOOK

The flow at the South Australian border is approximately 10 GL/day and will increase to around 10.5 GL/day during the coming week. It comprises:

- normal March Entitlement Flow 6 GL/day
- plus environmental water
- minus deferred water, and
- interstate trade adjustments.

The flow over Lock 1 is approximately 7.5 GL/day and will increase to around 8.5 GL/day during the coming week, depending on weather conditions and extractions.

It is important to note that flow forecasts in this advice are based on the information available at the time of preparation. Advice may change as new gauging information becomes available, or due to rainfall events or changed operations upstream. The forecasts will be revised as new information becomes available.

## ENVIRONMENTAL WATER

During March up to 137 GL of environmental water will be delivered to South Australia. The environmental water will provide in-channel, Lower Lakes and Coorong environmental and water quality benefits. The volume of environmental water delivered during February 2017 was approximately 98 GL.

DEWNR is continuing discussions regarding environmental water to be delivered during 2016-17.

## MURRAY MOUTH

Dredging operations at the Murray Mouth commenced on 9 January 2015 to maintain connectivity (exchange of water) between the Coorong and the Southern Ocean.

The dredging operations combined with recent substantial barrage releases have improved conditions at the Murray Mouth. As the recent, lengthy unregulated flow event has now ceased, the dredging program is being reviewed to determine if dredging should continue. One dredge is currently operating in the Goolwa and Tauwitschere channels. At 12 March 2017 a total of approximately 1 876 300 cubic metres of sand had been removed by dredging operations since commencement.

Mariners are advised that there are still a number of shallow zones in and adjacent to the Murray Mouth. They should follow all directions in the area and reduce their speed. Boats equipped with echo sounders should regularly check depths and avoid travelling at low tide. Mariners are reminded that navigation through the Murray Mouth is only permitted during daylight hours and that Exclusion Zones established around the dredging operations are in place to ensure public safety. Refer to Notice to Mariners No 42 of 2016

[www.dpti.sa.gov.au/news?a=287322](http://www.dpti.sa.gov.au/news?a=287322)

There is a partial park closure in place for the northern tip of the Coorong National Park. For more information visit [www.environment.sa.gov.au/parks/Safety/Park\\_closures/141219-coorong-national-park](http://www.environment.sa.gov.au/parks/Safety/Park_closures/141219-coorong-national-park).

## BARRAGE OPERATIONS AND WATER LEVELS IN THE LOWER LAKES

The water level in Lake Alexandrina is approximately 0.603 m AHD and Lake Albert approximately 0.602 m AHD. Water levels are being managed to achieve a target water of approximately 0.5 m AHD by the end of April 2017.

During the week ending 14 March 2017, total barrage releases were approximately 37 GL. Releases are being prioritised at Tauwitschere and Goolwa barrages. All fishways are operational and providing fish passage between Lake Alexandrina and the Coorong.

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During adverse weather conditions SA Water will operate the barrages to minimise the risk of seawater entering Lake Alexandrina, therefore minimising any negative salinity impacts from reverse flow events.

Water levels and barrage operations are monitored closely by the South Australian Government, the Murray-Darling Basin Authority and the Commonwealth Environmental Water Office.

### **WEIR POOL OPERATIONS**

The Lock 1 weir pool is approximately 0.1 m below the normal pool level of 3.2 m AHD to enable engineering works to be undertaken at the weir.

### **NAVIGATION ISSUES**

Sandbars in the vicinity of the Murray Mouth may cause navigation hazards. Mariners are advised to navigate with caution when operating in the area. Sandbars are also present along sections of the River Murray downstream of Locks 7 and 8 and in South Australia. All Mariners should be aware of the risk of submerged navigation hazards, and should regularly check river depth.



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## RIVER MURRAY WATER LEVELS

Below is a table of River Murray water levels at a number of locations from Lock 10 (near Wentworth) to Murray Bridge.

**River Murray Water Levels**

Location	River km	Normal Pool Level (m AHD)	Current Level 15/3/2017 (m AHD)	1974 Flood Level (m AHD)	1993 Flood Level (m AHD)	2016 High Water Level (m AHD)
Lock 10	825.0	30.80	30.80	33.81	33.32	32.72
Lock 9 Kulnine	764.8	27.40	27.34	30.03	29.44	28.85
Lock 8 Wangumma	725.7	24.60	24.18	27.60	27.19	26.85
Lock 7 Rufus River	696.6	22.10	21.60	25.70	25.24	24.97
Lock 6 Murtho	619.8	19.25	19.27	21.03	20.50	20.19
Renmark	567.4	-	16.35	18.54	18.04	17.44
Lock 5	562.4	16.30	16.35	18.07	17.50	17.05
Lyrup	537.8	-	13.28	16.85	16.26	15.80
Berri	525.9	-	13.25	15.81	15.74	15.21
Lock 4	516.2	13.20	13.24	15.65	15.08	14.73
Loxton	489.9	-	10.20	15.05	14.12	13.54
Cobdogla	446.9	-	9.92	13.44	12.38	11.59
Lock 3	431.4	9.80	9.88	13.16	12.02	10.98
Overland Corner	425.9	-	6.33	12.73	11.58	10.41
Waikerie	383.6	-	6.30	11.26	10.24	9.20
Lock 2	362.1	6.10	6.13	10.28	9.30	8.32
Cadell	332.6	-	3.24	9.17	8.08	7.01
Morgan	321.7	-	3.17	8.85	7.65	6.38
Lock 1 Blanchetown	274.2	3.20	3.12	6.81	5.38	4.46
Swan Reach	245.0	0.75	0.59	6.06	4.51	3.11
Mannum PS	149.8	0.75	0.60	3.15	1.90	1.33
Murray Bridge	115.3	0.75	0.54	2.06	1.26	1.04

Note that the above water levels may be affected by local wind conditions.

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## FURTHER INFORMATION

The WaterConnect website is South Australia's comprehensive water information portal and can be accessed at [www.waterconnect.sa.gov.au](http://www.waterconnect.sa.gov.au)

Up-to-date River Murray salinity, flow and water level information can be accessed at the Department of Environment, Water and Natural Resources, SA Water and Murray-Darling Basin Authority websites

- [www.environment.sa.gov.au/managing-natural-resources/river-murray/water-allocation-and-trade/water-allocations-and-announcements](http://www.environment.sa.gov.au/managing-natural-resources/river-murray/water-allocation-and-trade/water-allocations-and-announcements)
- [www.waterconnect.sa.gov.au/Systems/RTWD/Pages/Default.aspx](http://www.waterconnect.sa.gov.au/Systems/RTWD/Pages/Default.aspx)
- [www.sawater.com.au/SAWater/Environment/WaterProofingAdelaide/TheRiverMurray/RMOU/Dailyflow.htm](http://www.sawater.com.au/SAWater/Environment/WaterProofingAdelaide/TheRiverMurray/RMOU/Dailyflow.htm)
- <http://livedata.mdba.gov.au/>

The latest news, information and announcements about the River Murray and Basin Plan are available at [River Murray Update](#).

The Department of Environment, Water and Natural Resources has published a series of inundation maps for the River Murray. They are available at [www.waterconnect.sa.gov.au/Systems/RMIM/SitePages/Home.aspx](http://www.waterconnect.sa.gov.au/Systems/RMIM/SitePages/Home.aspx)

Information on the management of acid drainage water in the Lower River Murray can be accessed at [www.epa.sa.gov.au/environmental\\_info/water\\_quality/programs/acid\\_sulfate\\_soils/lower\\_river\\_murray\\_reclaimed\\_irrigation\\_area\\_lmria](http://www.epa.sa.gov.au/environmental_info/water_quality/programs/acid_sulfate_soils/lower_river_murray_reclaimed_irrigation_area_lmria)

Details of river height and rainfall information in the River Murray within Victoria and New South Wales are available at the Bureau of Meteorology website [www.bom.gov.au/vic/flood](http://www.bom.gov.au/vic/flood)

Information provided by the Commonwealth Environmental Water Office can be accessed at [www.environment.gov.au/ewater/southern/murray/lower-murray.html](http://www.environment.gov.au/ewater/southern/murray/lower-murray.html)

Information on The Living Murray can be accessed at [www.mdba.gov.au/managing-water/environmental-water/delivering-environmental-water/living-murray-program](http://www.mdba.gov.au/managing-water/environmental-water/delivering-environmental-water/living-murray-program)

Chowilla Floodplain Icon Site management [www.environment.sa.gov.au/Chowilla-floodplain](http://www.environment.sa.gov.au/Chowilla-floodplain)

Department of Environment, Water and Natural Resources [www.environment.sa.gov.au/Home](http://www.environment.sa.gov.au/Home)

Information provided by the Department of Planning, Transport and Infrastructure on boat licences, registering motor boats, owning and operating water craft, and boat and marine safety can be accessed at [www.sa.gov.au/boatingmarine](http://www.sa.gov.au/boatingmarine)

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